Alaska Natural Gas Transportation System
Alaska Segment — 48” Natural Gas Pipeline
(Prudhoe Bay To Canadian Border)
ALASKA SEGMENT OF ANGTS

ENVIRONMENTAL MASTER GUIDE
LEVEL I

PREPARED
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ARLIS
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The Environmental Master Guide (EMG) is a compilation of environmental information on the Alaska segment of Alaska Natural Gas Transportation System (ANGTS). It provides rapid access to information on sensitive areas and time periods which result in design limitations and construction restraints.

The EMG is based on existing literature and field studies as well as NWA sponsored research and investigations. These data are evaluated and integrated into the EMG by NWA/Fluor Environmental Affairs. The EMG is a living document; it will be refined with new environmental data and project information. Agency interaction has been instrumental in the development of the EMG.

The EMG is composed into three “Levels.” Level I consists of a set of alignment sheets and a set of topographic sheets. Level II consists of data sheets with detailed information about the entries on Level I. Level III is a bibliography of the information used to develop the EMG.
LEVEL I

ALIGNMENT SHEETS

Level I alignment sheets graphically depict environmentally sensitive areas such as fish streams and nest areas, as well as selected project features such as compressor stations that may impact these areas. Each alignment sheet also has a calendar of sensitive periods for the areas covered. A coding system identifies the entries and each entry is correlated with a Level II data sheet.

TOPOGRAPHIC SUPPLEMENT

The topographic sheets depict an overview of wildlife habitats and movement zones including coverage beyond the alignment sheet photobands. The topographic sheets differ from the alignment sheets in that they do not contain fisheries and stream information, but they do present species and range information which is better displayed at a large scale. Also depicted on the topographic sheets are selected project features such as potential material sites.

(Figures 1 and 2 are samples of the alignment and topographic sheets with instructions for their use.)

LEVEL II

Level II data sheets contain expanded information on Level I entries.

It is intended that a Level II data sheet will synthesize information necessary for daily project decisions affecting a particular environmental resource. Level II biological information includes: species and habitat data, protection strategies, specific restrictions, source document citations, and other information pertinent to the site.

LEVEL III

Level III is a discrete set of documents used to develop all levels of the Environmental Master Guide and cited in Level II. The documents are comprised of reports, maps and drawings generated from the gasline project, published literature, and unpublished agency files and sources.
TERMS AND DEFINITIONS

AS - Archaeological Sites: are cultural resources that include prehistoric or historic archaeological remains, standing historic structures, and sites considered culturally important to the regional inhabitants. Each is mapped in Level I with “floating boundaries,” indicating the general area of concern but masking specific location. The use of floating boundaries aids in protecting these sensitive sites from unauthorized disturbance. State identification numbers appear with archaeological site codes on alignment sheets only.

B - Bison habitats: depicted are areas of bison use.*

BB - Black bear habitats: are areas of intensive year round use by black bear.*

BE - Bald Eagle habitats: are areas observed or cited in literature to be nesting sites for Bald Eagles. Specific raptor nest locations are masked by “floating boundaries” to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

BM - Bison movement zones: are areas traversed by bison during traditional seasonal migrations.*

C - Caribou habitats: are areas of seasonal concentrations of caribou.*

CC - Caribou calving habitats: are areas utilized by caribou for calving.*

CM - Caribou movement zones: are areas traversed by caribou during traditional seasonal migrations.*

DS - Dall sheep habitats: are areas of seasonal concentrations of Dall sheep.

DSL - Dall sheep lambing habitats: are areas observed or cited in the literature as being used by Dall sheep for lambing. These habitats are areas of steep, mountainous terrain.

DSM - Dall sheep movement: zones are areas traditionally traversed by Dall sheep.*

EH - Endangered species habitats: are areas observed or cited in the literature to have been nest sites for peregrine falcons. Nest sites are further classified into “likely” or “not likely” to be reoccupied. Specific nest locations are masked by “floating boundaries” to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

EMS - Exploration material sites: are proposed areas to be investigated and possibly developed as a borrow pit for gravel, riprap, shot rock and other earth materials to be used for workpad, access road, backfill and other civil construction.*

FH - Fish habitats: are waterbodies used by fish populations; use may include overwintering, spawning, rearing and migration. (Alignment sheets only.)

GB - Grizzly bear habitats: are areas of year round concentrations of grizzly bears.*

GE - Golden Eagle habitats: are areas observed or cited in literature to be nesting sites for Golden Eagles. Specific raptor nest locations are masked by “floating boundaries” to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

GGO - Great Gray Owl habitats: are areas observed or cited in literature to be nesting sites for Great Gray Owls. Specific raptor nest locations are masked by “floating boundaries” to conceal their exact location.*

GHO - Great Horned Owl habitats: are areas observed or cited in literature to be nesting sites for Great Horned Owls. Specific raptor nest locations are masked by “floating boundaries” to conceal their exact location.*
GOS - Goshawk habitats: are areas observed or cited in literature to be nesting sites for Goshawks. Specific raptor nest locations are masked by "floating boundaries" to conceal their exact location.*

GYR - Gyrfalcon habitats: are areas observed or cited in literature to be nesting sites for Gyrfalcon. Specific raptor nest locations are masked by "floating boundaries" to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

M - Moose habitats: are areas of seasonal concentrations of moose.*

MC - Moose calving habitats: are areas utilized by moose for calving.*

ML - Mineral licks: are areas of natural mineral spring or mineral deposits at the ground surface and used by mammals as a mineral source.

MM - Moose movement zones: are areas traditionally traversed by moose.*

MP - Mile Posts along the pipeline route are displayed every mile on the alignment sheets and every five miles on the topographic sheets and are sequential from Prudhoe Bay to the Canadian Border.

OS - Osprey habitats: are areas observed or cited in literature to be nesting sites for Osprey. Specific raptor nest locations are masked by "floating boundaries" to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

RLH - Rough Legged Hawk habitats: are areas observed or cited in literature to be nesting sites for Rough Legged Hawks. Specific raptor nest locations are masked by "floating boundaries" to conceal their exact location. Identification numbers per David Roseneau appear with site codes on alignment sheets only.

RTH - Red Tailed Hawk habitats: are areas observed or cited in literature to be nesting sites for Red Tailed Hawks. Specific raptor nest locations are masked by "floating boundaries" to conceal their exact location.*

RX - River and floodplain crossings: designate rivers or floodplains traversed by the NWA alignment. If the crossing is fish habitat the code will be followed by FH. (Alignment sheets only.)

SC - Sandhill crane habitats: are areas of sandhill crane concentration for breeding, nesting, molting, staging and feeding.

SCM - Sandhill crane migration: and resting areas are seasonal migration routes and resting areas used by sandhill cranes. Resting areas have been designated "sensitive." Arrows show migration routes.*

SWD - Solid waste disposal sites: are proposed areas used to dispose of residue from incinerators, nonrecoverable scrap materials and other inert wastes.*

SY - Storage yards: are proposed areas used for storage of pipeline materials and equipment.*

WB - Waterbird habitats: are areas of waterbird concentration for breeding, nesting, molting, staging and feeding.

WBM - Waterbird migration: and resting areas are seasonal migration routes and resting areas used by waterbirds. (Resting areas have been designated "sensitive." ) Arrows show migration routes.*

* topographic sheets only
(alignment sheets only)
FACILITIES

A. Camps depicted represent proposed pipeline construction camps, and are called out on the photoband. Those that are off the photomosaic on the alignment sheets appear under "sites not on the alignment sheet."

B. Compressor stations are facilities for compressing and chilling incoming gas and appear in the photomosaic. Future Compressor station locations appear in profile data box in the general vicinity of the site.

C. Metering stations are facilities for measuring quantities of gas and appear in photomosaic.
Photo Mosaic: The photo mosaic is a composite of aerial photographs on which various data have been graphically indicated. The photo band encompasses an area 2 miles wide and 6 miles long. Sites or habitats confined to concise locations have entry codes numbered sequentially on each alignment sheet. For example: AP 6-015(78) means an aerial photo of flight number 6; 015 is the photo number for that flight. (78) is the year it was flown. APRF signifies it is a reflight of the aerial photo; PLRA signifies a reflight for pipeline reroute "A".

Aerial Photo Number: This box shows the aerial photos which compose the alignment sheet. For example: AP 6-015(78) means an aerial photo of flight number 6; 015 is the photo number for that flight. (78) is the year it was flown. APRF signifies it is a reflight of the aerial photo; PLRA signifies a reflight for pipeline reroute "A".

Lower Data Box: Data from Level II on fish habitat, raptor habitat, mammal habitat, waterbird nesting and archaeological sites which are either "above" the pipeline or totally off the photo mosaic appear in this box.

Profile Data Box: This box portrays the topographic profile of the pipeline alignment and associated mileposts. Data intersecting the pipeline are depicted on the photo band and connected by lines to specific pipeline profile locations. Also included in this box are unique/sensitive vegetation areas and areas having high wildlife habitat value.

Legend: An explanatory list of the symbols used to note data entries.

Revision Block: Shows each revision by number, the date it was made, and the purpose of the revision.

Confidentiality Box: Notice of ownership and confidentiality of the information contained on these sheets.
Photo Mosaic: The photo mosaic is a composite of USGS 1:63360 maps encompassing an area approximately 36 miles long by 10 miles wide and on the reductions approximately 20 miles long by 10 miles wide. Township, range and section numbers appear on the photo mosaic, and mileposts are given every five miles.

Sites or habitats confined to concise locations have entry codes numbered sequentially per the alignment sheets. For example: AS-022-3 defines the third archaeologically sensitive site on alignment sheet #022.

Mammal and waterbird habitats which cannot be confined to specific areas have entry codes numbered sequentially from north to south along the pipeline route. For example: WBM-2 defines the waterbird migration and nesting area as the second such habitat encountered by the pipeline alignment.

Legend: An explanatory list of the symbols used to note data entries.

Revision Block: Shows each revision by number, the date it was made, and the purpose of the revision.

Confidentiality Box: Notice of ownership and confidentiality of the information contained on these sheets.

Title And Drawing Number Block: This block gives title of the drawing, drawing number, and revision number.

Scale: This set of drawings was generated from USGS 1:63360 maps in which 1" = 1 mile. A scale is shown for accurately computing distances on reduced maps.

Lower Data Box: This block is used for the call-out of archaeological sites, mineral licks, raptor habitats, proposed compressor stations, and solid waste disposal sites which are either "below" the pipeline or totally off the photo mosaic.

Alignment Sheet Number Box: In this block the environmental master guide alignment sheet number is shown giving the correlation between the alignment sheet drawings and the topographic supplement drawings.

Upper Data Box: This block is for the call-out of archaeological sites, mineral licks, solid waste disposal sites, and raptor habitats which are either "above" the pipeline or totally off the photo mosaic.
LE GENDOS • OSPREY
PLRA: PIPELINE AREA
RF • REFLECT
RLL = ROUGH-LEGGED HAWK
AX • RIVER & FLOODPLAIN CROSSING
SC = SANDHILL CRANE NESTING & INTEGRATION
PUTULIGAYUK RIVER
X 46° 00' 00" NATURAL GAS PIPELINE ENVIRONMENTAL MASTER GUIDE
Legend:

- Archaeological Site
- Dall Sheep Calving
- Snow Goose Nesting
- Great Gray Owl Nesting
- Sooty Shearwater Site
- Coal Mine
- Rangeland
- Canoe
- Waterbird Nesting
- Waterbird Migration & Resting
- Archeological Site
- Dall Sheep Movement
- Snow Goose Nesting
- Great Gray Owl Movement
- Sooty Shearwater Site
- Coal Mine
- Rangeland
- Canoe
- Waterbird Nesting
- Waterbird Migration & Resting

Compressor Station No. 1 (Future)

Alaskan Northwest Natural Gas Transportation Company
Environmental Master Guide
Topographic Supplement

Future Fluor Project Management Contractor
This image appears to be a topographic map with various symbols and annotations, likely representing different ecological or environmental features. The legend on the bottom of the image includes symbols for various geological and ecological features such as springs, wetlands, and geological formations. The map is titled "ENVIRONMENTAL MASTER GUIDE TOPOGRAPHIC SUPPLEMENT" and is part of a larger project managed by the ALASKAN NORTHWEST NATURAL GAS TRANSPORTATION COMPANY.